

Outgoing  
M103710626



Mike Bradley <mbradley@utah.gov>

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## Seed mixes for La Sal

1 message

**Mike Bradley** <mbradley@utah.gov>

Fri, Dec 13, 2013 at 11:31 AM

To: "Frank Filas, P.E." <FFilas@energyfuels.com>

Cc: Andrea Reither <AREither@energyfuels.com>

Frank,

There are some adjustments we would recommend for the "low" area mix. The area around the Beaver shaft is classified by the NRCS as a mix of upland stony loam and upland loam with an ecological classification of Wyoming Big/Basin Big Sagebrush and Pinyon-Utah Juniper. The lowland mix did not include any sagebrush. Please include Wyoming Big Sagebrush in the mix. In addition, there are no forbs in this mix. Please include some forbs such as Palmer's Penstemon, Lewis Flax and/or Scarlet Globemallow. We would also recommend replacing the Blue Grama and Sand Dropseed with Muttongrass and Needle-and-Thread.

The "high" land mix could also use some minor adjustment. After discussing this with Paul and Lynn Kunzler, the Division doesn't believe Blue Grama is really appropriate for this area and can be removed from the mix. Since there are already four species of grass, I replaced it with Palmer's Penstemon. I also adjusted some of the seed rates (sagebrush) to conform with generally recommended rates. Please see attached PDFs.

Let me know if you have any questions.

Thanks,

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Mike Bradley

Environmental Scientist III / Reclamation Specialist

Utah Division of Oil, Gas and Mining

M-F 7:30-4:30

801-538-5332

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### 2 attachments



**Seed Mix - Beaver and La Sal\_MB.pdf**

19K



**Seed Mix - Pandora, Snowball, Pine Ridge-MB.pdf**

19K



Project Name Database #	Seed Mix Approved for Beaver and La Sal			Acres	Budget	Habitat Treatment	Approximate Date Needed
				1		Broadcast/Harrow	

Seed: Common Name	Seed: Scientific Name	Variety	Bulk Pounds per acre	PLS Pounds per acre	Cost per pound	Total Pounds	# Seeds/lb	Average PLS	# of Viable Seeds/sq foot	Total Cost
Muttongrass	Poa fendleriana	Any	1	0.90	\$20.98	1	890,000	90.11	18.41	\$20.98
Needle and Thread	Stipa comata	Any	2	1.63	\$31.05	2	115,000	81.38	4.30	\$62.10
Galleta	Hilaria jamesii	Any	2	1.59	\$20.10	2	159,000	79.48	5.80	\$40.20
Bottlebrush Squirreltail	Sitanion hystrix	Any	2	1.71	\$20.60	2	175,000	85.41	6.86	\$41.20
Indian Ricegrass	Oryzopsis hymenoides	Any	2	1.83	\$6.55	2	141,000	91.32	5.91	\$13.10
Palmer Penstemon	Penstemon palmeri	Any	0.5	0.40	\$21.03	0.5	610,000	80.19	5.61	\$10.52
Lewis Flax	Linum lewisii	Any	1	0.95	\$20.20	1	170,000	94.63	3.69	\$20.20
Winterfat	Ceratoides lanata	Any	2	0.59	\$7.16	2	56,700	29.38	0.76	\$14.32
Fourwing Saltbush	Atriplex canescens	Any	2	0.84	\$10.38	2	52,000	41.77	1.00	\$20.76
Low Rabbitbrush	Chrysothamnus viscidiflorus	Any	1	0.20	\$8.72	1	782,000	20.00	3.59	\$8.72
Sagebrush, Wyoming	Artemisia tridentata wyomingensis	Any	0.2	0.04	\$16.04	0.2	2,500,000	19.47	2.23	\$3.21
			Total Pounds	16					Total	\$255.30
			Bulk lbs/acre	15.70						
			PLS lbs/acre	10.66						
			Dollars/acre	\$ 255.30						
			Live seed/ft <sup>2</sup>	58.18						

Notes

PLS = Pure Live Seed; Some scientific names on this sheet are outdated.



Project Name	Seed Mix Approved for Pandora, Snowball, or Pine Ridge			Acres	Budget	Habitat Treatment	Approximate Date Needed
Database #				1		Broadcast/Harrow	

Seed: Common Name	Seed: Scientific Name	Variety	Bulk Pounds per acre	PLS Pounds per acre	Cost per pound	Total Pounds	# Seeds/lb	Average PLS	# of Viable Seeds/sq foot	Total Cost
Muttongrass	Poa fendleriana	Any	1	0.90	\$20.98	1	890,000	90.11	18.41	\$20.98
Indian Ricegrass	Oryzopsis hymenoides	Any	2	1.83	\$6.55	2	141,000	91.32	5.91	\$13.10
Needle and Thread	Stipa comata	Any	2.5	2.03	\$31.05	2.5	115,000	81.38	5.37	\$77.63
Western Wheatgrass	Agropyron smithii	Any	2.5	2.17	\$3.10	2.5	105,000	86.91	5.24	\$7.75
Palmer Penstemon	Penstemon palmeri	Any	0.5	0.40	\$21.03	0.5	610,000	80.19	5.61	\$10.52
Sagebrush, Wyoming	Artemisia tridentata wyomingensis	Any	0.2	0.04	\$16.04	0.2	2,500,000	19.47	2.23	\$3.21
Snowberry	Symphoricarpos oreophilus	Any	2	1.67	\$28.50	2	54,700	83.56	2.10	\$57.00
Utah Sweetvech	Hedysarum utahensis	Any	2	1.63	\$53.74	2	33,600	81.61	1.26	\$107.48
Lewis Flax	Linum lewisii	Any	1	0.95	\$20.20	1	170,000	94.63	3.69	\$20.20
Green Ephedra	Ephedra viridis	Any	1	0.90	\$17.21	1	21,000	89.81	0.43	\$17.21
			Total Pounds	15					Total	\$335.07
			Bulk lbs/acre	14.70						
			PLS lbs/acre	12.52						
			Dollars/acre	\$ 335.07						
			Live seed/ft <sup>2</sup>	50.26						

#### Notes

Also recommend Letterman's Needlegrass (Achnatherum lettermanii) but it was not in the list. Use 2 pounds PLS per acre.  
PLS = Pure Live Seed